APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,707	03/29/2004	Thomas D. Needham	POU920040025US1	1362

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EXAMINER
KHATRI, ANIL

ART UNIT	PAPER NUMBER
2191	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	· 10/811,707	NEEDHAM, THOMAS D.
	Examiner	**Art Unit**	
	Anil Khatri	2191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>14 December 2007</u>.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-31</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-31</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 08-06)   Office Action Summary   Part of Paper No./Mail Date 20080209

Response to Amendment

1.   This action is in response to the request for reconsideration filed on 12/14/2007.

2.   As per applicant's request claims 1, 11 and 21-22 have been are amended.

3.   As per applicant request claims 1-31 has been considered but they are not persuasive.

4.   Claims 1-5, 8-15, 18-26 and 29-31 are rejected under 35 U.S.C. 102(e) as being

anticipated by *Goodman et al* USPN 7,089,547 and Claims 6, 7, 16, 17, 27 and 28 are

rejected under 35 U.S.C. 103(a) as being unpatentable over *Goodman et al* USPN

7,089,547 in view of *Farkas et al* USPN 7,099,967.

In remarks applicant argues,

I. Copying is by currently executing first software modules of a system.

II. Replacing the currently executing first software module with the second software module by

storing the second software module in a memory location which at least partly overlies the first

software module.

III. Without resetting the system.

IV. Executing the update control code copied from the first software module.

V. Copying update control code includes copying the update control ode to memory space

outside the target memory space and wherein the update control code includes control code for

determining when DMA operation is completed and for branching to an entry point of the second

software module upon completion of the DMA operation.

In response to applicant arguments,

I. It was noted that cited reference fairly teaches copying is by currently executing first software

modules of a system (column 4,lines 33-54, As discussed above, it may be advantageous to

provide the capability to upgrade the system firmware of the embedded system. This simplifies

the task of providing enhancements and fixes to the product. It may be desireable, and

in some cases crucial, to provide a failsafe firmware update to the embedded system, such that,

even if the update step is disrupted, the embedded system will continue to operate to at least the

level that it operated at, before the firmware update. The incorporated '844 U.S. patent

application provides a non-volatile memory having a plurality of separately erasable sectors or

memory areas for storing at least two separate copies of operational code, and a boot

program stored separately from the operational code. Any copy of the operational code may be

updated without requiring an update of the boot code. For example, in the case of two copies,

both copies may be the most recent update, or one copy may be more recent than the other.

Any new update will be made to the down-level operational code. Thus, the operational code

which was successfully operating the system prior to the new update is preserved, and, in

the case of disruption to the new update, the successfully operating code will simply resume its

place). Therefore, examiner interprets that copying is done in order to update the software from

old to new on.

II. It was also noted that cited reference fairly teaches replacing the currently executing first

software module with the second software module by storing the second software module in a

memory location which at least partly overlies the first software module (Column 2, lines 62-

67, n a still further embodiment, the plurality of update firmware code images are supplied to the embedded system at an interface, and the computer processor selects the one update firmware code image and directly overwrites the determined firmware code image at the rewritable non-volatile memory). Therefore, examiner interprets that copy and replacing and updating takes place with the method to overwrite the old software.

III. It was also noted that reference fairly suggest without resetting the system (column 4,lines 41-54, the incorporated '844 U.S. patent application provides a non-volatile memory having a plurality of separately erasable sectors or memory areas for storing at least two separate copies of operational code, and a boot program stored separately from the operational code. Any copy of the operational code may be updated without requiring an update of the boot code.

For example, in the case of two copies, both copies may be the most recent update, or one copy may be more recent than the other. Any new update will be made to the down-level operational code. Thus, the operational code which was successfully operating the system prior to the new update is preserved, and, in the case of disruption to the new update, the successfully operating code will simply resume its place). Therefore, examiner interprets that t allows without resetting the system and update the boot code.

IV. It was also noted that cited reference fairly teaches executing the update control code copied from the first software module (column 8,lines 22-36, In step 506, a check is made to determine which firmware code image is more recent. This may be indicated by a higher firmware version, a more recent date/time stamp, or some other indicator. If, in the instant example, the

first code image 202 of FIG. 2 is more recent than the second code image 203, then the process

moves to step 507 of FIG. 5 where the first code image is selected and executed. If, however,

step 506 concludes that the first code image 202 of FIG. 2 is not more recent than the second

code image 203, then control moves to step 508 of FIG. 5 where the second code image is

selected and executed. Alternatively, if the down level code images are marked in step 430

of FIG. 4, steps 504, 506, 507 and 508 of FIG. 5 may be eliminated. In this case, a "NO"

answer from step 502 would lead to step 505. This is possible because of the fact that there will

always be a marked or defective code image from step 430 of FIG. 4). Therefore, examiner

interprets that it allows update control been executed to update the code for first software or old

to new software.

V. It was also noted that cited reference fairly suggest copying update control code includes

copying the update control ode to memory space outside the target memory space and wherein

the update control code includes control code for determining when DMA operation is

completed and for branching to an entry point of the second software module upon completion

of the DMA operation (column 7,lines 20-27, n step 423, the selected update firmware code

image is received and processor 102 writes it to the non-volatile memory and overwrites the

firmware code image to be updated. The selected update firmware code image may be

received at I/O interface 105 of FIG. 1 and saved in memory, such as RAM 103, prior to writing

to the non-volatile memory 104, or it may be directly written to non-volatile memory while it is

being received. In either case, the update firmware code image may be buffered as it is

received). Therefore, examiner interprets that it allows direct access and direct memory update with control see figure 4).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anil Khatri whose telephone number is 571-272-3725. The examiner can normally be reached on M-F 8:30-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Zhen can be reached on 571-272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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ANIL KHATRI
PRIMARY EXAMINER